2006 Assessment Guidance Comments Responses

EPA Comments Virginia Water Quality Assessment Guidance Manual

1. Page 5, In VA Category 1A, if the waters (Assessment Unit [AU]) is attaining all uses, why would a TMDL need to be developed? Either strike out this Category or better explain the situation for which it represents. This really seems like a Category 4a classification. In VA Category 2C, if insufficient data is available for making assessment determination, shouldn't this AU be classified as Category 3? If you are listing AUs in more than one category (as it seems in these two above cases), shouldn't that be noted as such?

Response: *There are cases where a water has had a TMDL(s) developed and new assessment has shown the water to fully support the designated use(s) that the TMDL had been developed to meet the impaired use(s). DEQ wants to continue to track these waters that now meet the use(s) but have a TMDL in place. Thus, Categories 1A and 2C are needed. You will note that Category 4A are used for waters that are impaired but have an approved TMDL.*

2. Page 6, SPMD technology provides a surrogate to the aquatic biota being exposed to the discharge or in-stream conditions over a period of time. The SPMD does catch the exceedences even if it only occurs once. However, the concentration is diluted over the 30 day exposure period. For example, a moderate but toxic concentration of chemical A is exceeded on day 3 of the 30 day exposure period and no other exceedences occur for the rest of the exposure period. The average concentration over the 30 day period may not violate the 4 day chronic standard. However, the SPMD did document that chemical A was released into the environment. If the placement of the SPMD was to monitor the effect of discharge, it may require the permit holder to run toxicity tests and detailed monitoring to determine why the release occurred. But can you be certain that the SPMD results will actually show exceedences? Since it averages the concentration over time, the SPMD dilutes and infrequent exceedences and may produce a false negative result. In other words, for ambient monitoring, the SPMD will only show violations if the infrequent exceedences are really high or if the exceedences are often enough and at a high enough magnitude to show an average value above the criteria.

Response: *Any exceedence of a 30 day SPMD sample is treated as a water of concern and additional followup monitoring would be considered. In many cases, the SPMD has been deployed to identify stressors for benthic impairments or in other cases, to determine pollutant hotspots. As you have pointed out, there are several scenarios that could trigger a 30-day exceedence. All factors would need to be considered for any additional followup monitoring needed.*

305(b)/303(d) Assessment Process

3. Page 8, fourth paragraph, there needs to be agreement in use of terminology in this paragraph and VA Category 3C on Page 6. What is the protocol for prioritizing follow-up monitoring? Throughout this Guidance, there are statements on follow-up monitoring for 'waters of concern' and water with insufficient data. The exact procedure which needs to be followed has to be documented or referenced. There is a sense that the urgency for follow-up monitoring varies based on the circumstances all of which makes it unclear in regard to timetables.

Response: *Due to the many needs for water quality data and limited manpower and financial resources, it is difficult, if not impossible to predict when followup monitoring can be scheduled. In many cases, DEQ is working with other monitoring groups, such as citizen monitoring, to assist DEQ with followup monitoring needs.*

Water Quality Monitoring, Information and Restoration Act (WQMIRA)

4. Page 9, Please define the term "significant decline" in Part 1e.

Response: *This term was not defined by the Virginia legislature. This term is being addressed by improvements and/or additions to water quality standards through triennial reviews. The adoption of the new Chesapeake Bay criteria is an example of the Standards being updated to address aquatic life use expectations.*

Rules for the 2004 Water Quality Assessment

5. Page 11, Rule 4 – use of SPMD-see comment 2. The uncertainties surrounding the use of SPMD for ambient monitoring, especially the dilution factor which may mask two or more exceedences over that 30-day period may not allow for any clear statement of use attainment. If anything, the presence of chemical of toxic concern in single SPMD results should trigger the need for additional targeted monitoring.

Response: *You will note that it is the intent of the agency to followup monitoring where observed effects have been noted as described in the fully supporting with observed effects section of the guidance.*

6. Rule 5, the protocol for handling depth profile sampling is unclear. With each depth sample assessed as an independent sample, how will minimal sample number condition be met for assessment purposes? For clarity, please elaborate on this assessment protocol.

Response: *As with previous assessments, as depth profile data is reviewed, it is assessed against the 10.5% exceedence rule. Where a thermocline is identified, each profile will be include in either a top water or bottom water assessment and all data points in top layer (epilimnion) and bottom layer (hypolimnion) will be assessed separately. The new Chesapeake Bay criteria and subsequent assessment has made this methodology obsolete for the Bay waters.*

Designated Uses of Virginia's Waters

7. Page 13, 2. Aquatic Life Use, would waters be listed for aquatic life use violations if benthic samples document impairment while the chemical analysis documents attainment of criteria?

Response: *Yes, under normal situations.*

See the discussion on Independent Applicability in the EPA 2006 Integrated Listing Guidance pages 43-45). It should be stated that the higher degree of certainty and reliability placed on biological assessment results in those finding would almost always override other assessment findings.

Fish Consumption Use, with the ability of toxins in the sediment to migrate up the food chain, would it not

be appropriate for waters with elevated levels of toxins in the sediment to be listed for fish consumption advisories?

Response: *Not without data to back up the migration from sediment to fish.*

Criteria to Determine the Degree of Use Support

8. Page 16, Fully supporting but having an observed effect; Conventional Parameters, waters where trend analysis project a WQS violation for phosphorus or fecal coliform by 2008 is by definition a fully supported but threatened water and will need to be placed in Category 5.

Response: *Normally, this would be true for pollutants with water quality standards. However, there is not a standard for phosphorus and the standard for fecal coliform will expire on June 30, 2008 and has already expired in waters with 12 or more data points for E.coli or enterococci.*

9. Toxic Pollutants, please see the two previous comments on appropriateness of using SPMD for making these types of determinations. The SPMD may be only appropriate as a preliminary screening tool.

Response: *Essentially, this is how we are using the SPMD data.*

10. Fish tissue/Sediment Contamination; are waters with a single tissue violation deemed to be fully supporting?

Response: *Yes. They are considered fully supporting with observed effects. As previously pointed out, this allows us to track these waters for appropriate and timely followup monitoring. All fish tissue data is reviewed by the Virginia Department of Health (VDH) and if the exceedence was deemed to be a health threat, an advisory would be posted.*

11. Isn't Category 3 (insufficient information a better description of status?

Response: *See previous response.*

12. Biological Evaluation; it is unclear how professional judgment confirms an impairment. This needs to be explained in more detail.

Response: *The biologist most familiar with the waters being assessed must use professional judgment in those assessments that are marginal. There are many factors, natural as well as anthropogenic, that one must consider especially as it relates to marginal benthic analysis.*

13. Moderately impaired waters should be listed as Category 3 (insufficient data) until status can be confirmed.

Response: *Documentation must be provided when a single moderate impairment is considered fully supporting with observed effects and not impaired. Once again, the observed effects are used for identifying those waters that need followup monitoring.*

14. Page 19, Table 2; For toxic pollutants in water column or sediment, one or more grab sample

exceedence can be equal to two exceedences which should result in water being declared impaired and not fully supporting. That potentiality as stated needs to be evaluated and rewritten so that the determination condition in the two columns are exclusive in nature.

Response: *A single toxic grab sample exceedence could be associated with two separate uses (aquatic life and/or wildlife). These would not be combined to make two exceedences but would remain a single exceedence for each or both uses and considered fully supporting with an observed effect.*

15. Waters with a single benthic evaluation indicating a moderate benthic impairment (confirmed or not) should be listed in Category 3 until confirmed.

Response: *See response to comment 13.*

Assessment Methodology

16. Page 20, Fixed Rate (Percent) Method, in the EPA 2006 Integrated Listing Guidance, the use of the fixed percent method is discouraged unless specifically implied in state WQS. With EPA having not proposed any 10.5% threshold, any reference to this in EPA 2006 Integrated Listing Guidance should be deleted from Virginia's methods discussion.

Response: *Virginia has based the assessment of chemical and bacteria pollutants on the original EPA 10% Rule which took into account the many natural factors that can occur in waters but still allow for the propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them. While the 2006 EPA guidance encourages the assessment to strictly follow the Water Quality Standards, as written, in regard to instantaneous criteria, Virginia's Water Quality Standards do not say the designated use is not being met if an occasional exceedence occurs. Thus, Virginia will continue to use the 10.5 % Rule, as has been used in previous assessments, to determine support of the chemical criteria until the Standards can be modified to expressly address the issue in the next triennial review.*

17. Page 22, Non DEQ Evaluation Methodology; EPA's reading of this discussion is that no matter how good, citizen monitoring data alone will still not be used for making assessment determinations. Is that a correct interpretation?

Response: *No. Chemical data that meets QA/QC procedures and has been approved by the DEQ QA/QC Coordinator can be used directly for assessment purposes provided the data is representative of the water quality over time.*

18. Page 24, Nonpoint Source (NPS) Assessment; in this discussion, there are mentions of conflicting assessment results and impaired waters ranking but no mention of listing waters based solely on the predictive NPS model. Please elaborate on why the state refuses to list waters based on the NPS model.

Response: *As stated in the first sentence, there can be conflicting assessment results associated with the NPS model. The model is used as a planning tool but Virginia believes water quality conclusions of support or impairment of designated uses should be based on water quality data in confirming predicted modeling results before the water is declared supporting or impaired.*

19. Does the state intend to delist waters on modeling data?

Response: *As far as the NPS model, no. However, if the modeling question is broader, then yes. Based on the new Chesapeake Bay criteria, it appears we will have to use modeling results, based on monitoring data, to make supporting or impairment listings.*

20. In Section 6.4.2 it states "Waters not meeting standards considered due to natural conditions .... the source of impairment listed as "Unknown"." Why wouldn't the source be natural conditions?

Response: *Yes. The guidance has been revised to reflect this observation.*

21. Page 31, Free-Flowing biological assessment; a single moderately impaired RBP II or MACS should not be listed as 'fully impaired but having observed effects.' At the least, those waters should be listed as Category 3 for insufficient data

Response: *See responses to comments 13 and 15.*

22. Page 33, Estuarine Biological Assessment; the new 'alternative method being used for the 2006 assessment period still has a minimal of 10 sample size per AU. Please delete text stating otherwise. The discussion regarding the discriminant analysis tool (benthic diagnostic tool) will need to be redone. The task force working on the 'alternative' method and the diagnostic tool have not definitively agreed on how the diagnostic tool will be used to identify causes in benthic impairments. Virginia's alignment of its Chesapeake Bay segments with that of the EPA Chesapeake Bay Program (CBP) has basically merged the minor tidal tributaries into the CBP segments. Please rewrite this discussion to reflect this. The task force working on the B-IBI Alternative Method did not agree to separate out minor tidal tributaries for reporting purposes.

Response: *This section has been re-written to reflect the task force decisions for benthic assessments as discussed in the report: Assessment of 2000 through 2004 Chesapeake Bay Estuarine Benthic Communities Protocol and Summary of Results for MD and VA 2006 305b/303d Integrated Reports September 30, 2005. In regards to segmentation, it was only in respect to the new Chesapeake Bay water quality standards (i.e. for dissolved oxygen and water clarity) that Virginia and the Federal-Interstate Bay Program has ever discussed and agreed should be assessed using the CBP segmentation scheme. The prior rational and decisions made in regards to benthic monitoring assessment segmentation (i.e. sub-segmentation of minor tributaries as separate from "mainstem' areas) are still valid and in effect. The task force working on the B-IBI alternative never opened, discussed, or agreed upon any changes to this segmentation concept.*

23. Page 36, Nutrient Screening Values; a single SV exceedence from a small data set (2-9 samples cannot be considered fully supporting. Due to inadequate sample or exceedence size, this water should be placed in Category 3 due to insufficient information for determining attainment. Please edit text to properly reflect Category placement.

Response: *As pointed out in other similar responses, Virginia views Category 2B to be "waters of concern" or as defined, having observed effects. These waters are tracked for additional followup monitoring. Since there are no nutrient Standards for 303d listing consideration but data is available and associated with aquatic life use, Category 2B is appropriate for tracking and possible consideration for additional followup monitoring.*

24. Page 36, Fish Tissue (Consumption) Use; more information needs to be presented regarding the timetables for conducting a Tier 2 Study once Tier 1 results reveal potential problems.

Response: *More information has been included in the guidance document.*

25. Page 37, Fish Tissue (Consumption) Use; if a fish tissue sample exceeds a WQS TV or TSV, that water body should not be listed as 'fully supporting but having observed effect' but as Category 3 for due to insufficient information for determining attainment. Please edit text to properly reflect Category placement.

Response: *As pointed out in other similar responses, Virginia views Category 2B to be "waters of concern" or as defined, having observed effects. They do not violate Water Quality Standards! These waters are tracked for additional followup monitoring.*

26. Page 39, Estuarine Toxic evaluation, Table 5 (with discussion); Scenario 6 – If conclusion is that chemical stresses are likely, what is the reasoning for the 3B (2B) Listing decision? The possible Category 2B listing needs to be explained. The presence of site or AU noted ecological/benthic degradation but inconclusive chemical and/or toxicity data indicates the need for more extensive follow-up monitoring to better understand the nature of the impairment cause. In this entire discussion, there was no mention of follow-up monitoring or the protocol for developing timetables for revisiting these areas of noted problems. Scenario 3 – With AVS and TOC levels known to change over the course of the year, timing of sampling activities is critical and will affect value of these types of Ancillary data.

Response: *Scenarios 3 and 6 (and Scenario 4) – The presence of chemical exceedences in the sediment (i.e., exceedence of screening values, not standards!) and/or the presence of sediment toxicity to standardized test organisms under laboratory conditions, indicate that the potential for environmental stress does exist. If seasonal changes in AVS and/or TOC levels influence the bioavailability of chemical contaminants or the resultant stress on the system, any significant degradation should be reflected in the temporally integrated response of the benthic community. In either case, the relative degradation of the biological (e.g., benthic) community is the ultimate measure of ALU attainment, and determines whether a waterbody segment is assessed as attaining, being threatened, or impaired for the designated use.*

Scenario 6 - Using "Best Professional Judgment" (BPJ), if significant exceedences of sediment screening values (not water quality standards!) or if toxic effects are observed in the laboratory, without significant degradation of the benthic community, an AU may be assigned to the 2B category.

27. Page 41, Stating that sublethal ecological endpoints are less critical than measures of survival is not a valid assumption to make. Long term effects of sublethal disruptions can be just as or more detrimental to the health of the aquatic community and should be given equal weight in both determining the use attainability level and causes/sources of problems.

Response: *The exhibition of chronic (sub-lethal) test endpoints by standardized test organisms under laboratory conditions indicates that the potential for environmental stress does exist. Although such endpoints may be just as critical to the health of the aquatic community in the long term, significant mortality demands more immediate attention and consequently is given more weight in assessment decisions. Significant chronic ecological effects should be reflected in the structure of the benthic community and the relative degradation of the biological (e.g., benthic) community is again the ultimate*

measure of ALU attainment, and determines whether a waterbody segment is assessed as attaining, being threatened, or impaired for the designated use.

28. Page 48, Lake and Reservoir Assessment, Background; replace 'will' with 'may' in discussion on hypolimnion becoming anoxic.

Response: *Revised text to include "may".*

29. If a lake has more than one sampling location, how will the assessment occur?

Response: *It depends on the results. If multiple stations all show the same results, they would be aggregated together. If they happen to have different results, they would likely be delineated separately, unless BPJ was used to override the separate delineations.*

30. Monitoring Station Data; with the date from each location be assessed separately, does that mean a lake with multiple sampling locations will be divided in separate AUs?

Response: *See previous response.*

31. TMDL Development and Assessment Process, in last line, change '2004' to '2006.'

Response: *Text has been revised.*

32. Page 51, Step 1: Determine if Lake is stratified; if the thermocline cannot be clearly delineated for what ever reason, is that lake really stratified?

Response: *Virginia, in coordination with EPA TMDL and WQS staff, identified the method in step 1 as a reasonable approach to determine if a lake or reservoir exhibits thermal stratification, and has been using this method since the 2004 assessment.*

33. What happens if one time a thermocline is delineated (barely) but subsequent visits shows no stratification? How will data be assessed?

Response: *That depends on the specific data. If DO violations occur only under situations of stratification, then the assessment of anthropogenic vs. natural is still merited using the TSI analysis. If the DO violations occur even during periods of non-stratification, then TSI analysis may not be warranted, unless in the assessor's best professional judgment there is additional information that justifies the analysis.*

34. Step 3: Apply Trophic State Indices (TSI), all data collected in the epilimnion will be aggregated and assessed for TSI. How will resulting TSI be combined with DO data since DO data from different stations are assessed separately?

Response: *Similar to the DO data from each station, the guidance clearly states that the TSI should be calculated for each monitoring station – the reference to the epilimnion is intended to clarify that water quality data from the epilimnion should be assessed separately from those in the hypolimnion in the station-specific analysis.*

35. Carlson recommends the use of phosphorus for the TSI in Fall, Winter, and Spring. Do phosphorus measurements accurately assess the TSI of a lake in the summer?

Response: *The guidance clearly states that chlorophyll a is the preferred indicator for the TSI analysis. However, in reservoirs with algaecide treatments, TP TSI is an appropriate substitute.*

36. Page 52, Step 3: Apply Trophic State Indices (TSI); Table 7 (with discussion) Category Listing based on the Carson TSI needs to be reevaluated. Change the '4A' in table to 4C for consistency with discussion.

Response: *Text has been revised.*

37. But are lakes with TSI < 60 actually impaired due to natural causes in the first place? Also, why would an oligotrophic lake be considered impaired at all unless specified in criteria?

Response: *The "impairment" in these situations would be due to violations of the DO criteria which is why the procedure to distinguish natural conditions using the TSI was developed.*

38. Page 56, Statewide Trends Analysis; Data preparation, the elimination of outliers should only be done with extreme. See pages 4-26 in EPA's Guidance for Data Quality Assessment: Practical Method for Data Analysis (QA/G-9) (EPA/600/R-96/084) for details.

Response: *Of the approximate 60,000 sampling events examined, relatively few data points appeared outside the normal range for a given parameter. The majority of those extreme values were identified as transcription errors. Those identified as decimal place errors were corrected or eliminated from the dataset. For those pH values above 10, if at the same station other pH values were not above approximately 8 during the same relative time period these values were removed from the trend data set. These values most likely represented non ambient conditions associated with short term episodic releases from point sources and were not considered to be indicative of overall long term water quality conditions.*

In addition to the univariate statistical preprocessing analysis to determine ordinal descriptive statistics the graphical output from WQ3 was used as a guide to identify possible erroneous data points. No data were removed using statistical outlier tests. The modified seasonal Kendall Tau tested used in our analysis is robust and not effected by extreme values or outliers.

39. Statewide Trends Analysis; WQ3 Analysis, the Kendall Tau has shortcoming which needs to be addressed to ensure that the trend analysis results are actually meaningful. How will the noted weaknesses be addressed?

Response: *The trend analysis software developed by Golde Holtzman, Ph.D. and Carl Zipper, Ph.D. at Virginia Tech utilizes a modified seasonal Kendall Tau test that is reasonable and appropriate for Virginia's assessment.*

40. Page 59, Individual Assessment Results; in the discussion on significant watershed improvements, it was stated that for threatened water projected to meet WQS by 2008 will be moved to Category 4B. This changing of category status dos not appear to be appropriate unless all the conditions relating to compliance schedule or permit conditions are first met. EPA will also require a high data proof threshold for movement from Category 5 to 4B. The discussions need to better articulate all the

required conditions which need to be met as well as present more detail regarding the statistical process for making this determination.

Response: *Text has been revised to include documentation for these professional judgments.*

303(d) Listing/De-Listing and TMDL Priority Ranking

41. Page 61, Effluent Limited Waters, Rule 1; in subpart 2 change 'facility' to 'AU or water.'

Response: *Text has been revised.*

42. Subpart 3 – this condition applies if the permit doesn't expire before the end of the 2008 reporting cycle.

Response: *Text has been included.*

43. Page 62, Effluent Limited Waters, Rule 2; second bullet – the waters mentioned should be relisted in Category 5 if compliance schedule has not been met.

Response: *Additional clarification has been added.*

44. Page 64, Impaired Waters, Rule 3; category 4A is incorrectly described. Change to 'impaired and TMDL completed/approved.' The EPA approved TMDL loadings must insure that the criteria will be attained within the newly discovered impaired area.

Response: *Text has been revised.*

Virginia Association of Municipal Wastewater Agencies (VAMWA) Comments

Please accept these comments on the Department's draft 2006 IR Guidance. As you may know, the Virginia Association of Municipal Wastewater Agencies (VAMWA) is a membership organization representing Virginia's publicly owned wastewater service agencies. VAMWA's members serve a approximately 95% of the sewered population of Virginia.

You may also recall that VAMWA has submitted comments on previous IR Guidance documents. Some of these issues have been addressed. However, there are issues that have not been addressed from our perspective. Some of these issues continue to be a concern, and those issues are repeated below along with VAMWA's specific comments on IR Guidance changes or new provisions.

1. In the general "rules" for assessment (Part III) the final three (11-13) are new. These appear to be generally appropriate. Changes to rule 5 appear to better and more correctly state the use of both average values and maximum/minimum data from data sets.

Response: *No response needed.*

2. We refer you to EPA's 2006 IR Guidance at http://www.epa.gov/owow/tmdl/2006IRG/. Part IV.K includes a good discussion of the use of different and sometimes conflicting water quality measures. In spite of EPA's longstanding statements of "independent applicability" of different measures, which has no basis in statute or regulations, EPA provides helpful advice on resolving water quality determinations in a manner that at least begins to address the validity or weight of different lines of evidence. We recommend that DEQ's add similar procedures to its IR Guidance. (We further address weight of evidence below in a more specific context.)

Response: *All assessments use a degree of professional judgment outside of independent applicability. While the above mentioned guidance does recognize data quality as a means of "weighting", generally EPA stands by the independent applicability policy where similar data quality assessments may indicate different designated use results.*

3. The Guidance continues to use numeric benchmarks for interpreting ambient monitoring data that have not been promulgated or subjected to the public safeguards of the APA process. Examples of such benchmarks include sediment thresholds, BIBI values, reference sites, trend analyses and back-calculated (from adopted water quality standards) tissue values.

   All such numeric benchmarks are being used in the listing process as if they were promulgated as water quality standards and are given equal weight to criteria that have been promulgated. This approach contradicts the reasons for the General Assembly even having adopted the APA and its regulation promulgation procedures and weakens the listing process.

   Additionally, this approach could be used as an example where benchmarks can be used in a regulatory framework without promulgation. This is a very real concern given current discussions to impose nutrient limits in NPDES permits without having water quality standards for those parameters. Perhaps such values could be used to prompt further research, but VAMWA cannot agree with the use of these unpromulgated regulations to list waters as impaired and requiring a TMDL.

Response: *DEQ believes the methods used to assess water quality do not need to be subjected to the APA process due to the fact that the assessment is not a regulatory action nor is it considered a case decision.*

Although the Guidance does not use Total Phosphorus or Chlorophyll a values for defining impairment, it should also not use such values for identifying "observed effects" for aquatic life. DEQ is in the process of developing through the APA process such criteria for non-tidal free flowing streams and lakes, and any further use of Total Phosphorus or Chlorophyll a data should await that process.

Response: *Excess nutrients (chlorophyll a and phosphorus) have been shown to be a primary contributor to aquatic life degradation and need to be assessed as possible sources of aquatic life degradation. Once nutrient criteria have been adopted as Standards, DEQ will be able to determine support or impairment of aquatic life use based on nutrient contributions*.

4. DEQ states in the Guidance that waters are listed as impaired and require a TMDL only when one or more pollutants do not meet water quality standards, and then DEQ quotes regulations as to the definition of "pollutant". Clearly the definition of "pollutant" does not include measures such as toxicity tests and biological assessments, yet DEQ is using such measures to list waters as impaired. These tests and assessments measure pollution rather than pollutants. Further, wasteloads for such measures cannot be quantified and a TMDL calculation is not possible. This problem has become more apparent as DEQ begins to attempt TMDLs for some streams listed for benthic impairment. VAMWA agrees that such analytical measures are useful in suggesting the need for more research to identify stressors causing unacceptable measures of biological condition. However, these measures cannot be used to list waters as impaired because they do not identify pollutants, as defined in regulation, causing impairment. It is possible that stressors other than pollutants (habitat modification, for example) could be responsible for the measures observed.

Response: *Toxicity tests and biological assessments have been used to determine if the General Criteria Standard 9 VAC 25-260-20 is being met. If natural stressors are suspected of causing impairment, the waters are listed as suspected naturally impaired and a special study to confirm the natural conditions is conducted. If the special study confirms a natural impairment, the water is listed as impaired and not needing a TMDL.*

5. The Guidance has not established defensible minimum data set sizes to address the uncertainty associated with impairment listings based on very little data. While in several cases at least two exceedences of water quality standards are required over a 5-year period to trigger an impairment listing, this listing can still only be based on as little as two data points. Since DEQ does not account for magnitude of standard exceedence in its listing procedure, an impairment listing can result from two marginal exceedences of a water quality standard. Such small data sets certainly do not describe a problem as chronic, which is DEQ's definition of when impairment should be concluded.

   This problem is made worse by DEQ's efforts to spread data collection out more thoroughly across Virginia. The use of resulting small data sets will necessarily result in incorrect listings; not only those that are incorrectly listed as impaired, but also those that are not listed as impaired and should be listed as impaired. Listings based on small data sets will also be biased by the seasons and conditions at the time samples were collected. The National Academy of Sciences National Research Council's report on water quality assessments and EPA's CALM both support

VAMWA's position that waterbodies having limited data must be listed in the indeterminate/insufficient categories used by DEQ in its Guidance.

Response: *The Water Quality Standards do not consider a data threshold for determining if designated uses are being met. As per EPA guidance, all credible data is used when assessing designated uses. Virginia agrees there is potential for data errors or other natural factors when it reviews all credible data. This fact is addressed in assessment guidance by the "2-hit rule", allowing up to 10.5% exceedences and best professional judgment.*

6. The VPDES permit program requires that only 40 CFR Part 136 analytical procedures be used to analyze samples when such a method is available and meets the use. The Guidance appears to have made improvements in conditioning the use of non-Part 136 data. However, there should be a specific requirement for the use of only 40 CFR Part 136 procedures. Regulation requires the use of such methods to ensure the reliability of data and comparability of results within and between labs. Failure to make this requirement in the Guidance will contradict these goals and impact the credibility of listings and the actions taken based on those listings.

Response: *DEQ uses all credible data when assessing waters. However, for supporting and listing purposes, all data used for assessment must be collected using an EPA accepted method and DEQ approved.*

7. The Virginia Water Quality Monitoring, Information and Restoration Act (WQMIRA) requires (according to this document) that an assessment of attribution of impairment between point and nonpoint sources be conducted for each water body, but guidance is not made available outlining how this will be done. Substantial federal guidance addresses these critical issues. This is a significant deficiency that must be adequately addressed prior to developing the next 305(b) and 303(d) reports.

Response: *DEQ regional staff, which are most familiar with point and nonpoint sources in a particular water, are charged with making an initial identification of the possible sources of impairments. Additional sampling and analysis to confirm point and nonpoint sources and loadings is conducted in preparation for a TMDL.*

8. The "weight of evidence" approach for evaluating toxics data in estuarine waters is significantly outdated and should not be used for listing waters as impaired. The approach infers that no single excursion will result in a listing of impairment, but this also assumes that multiple data points for multiple parameters in different media (sediment, water) are available. Where such data are not available, impairment may be automatically concluded if two or more data points suggest impairment. DEQ should be aware that the current Chesapeake Bay Program Toxics Characterization workgroup is significantly changing the decision rules used in this Guidance to make them more defensible. DEQ has also failed to recognize that the Bay Program approach to listing is based on the best professional judgment of approximately ten experts representing diverse perspectives. It is unlikely that DEQ assessments using this approach will incorporate this level of review; and decisions regarding listings will be biased by the review of one or two staff members, at best.

Response: *DEQ questions the meaning of the statement that "The approach infers that no single excursion will result in a listing of impairment, but this also assumes that multiple data points for multiple*

parameters in different media (sediment, water) are available. Where such data are not available, impairment may be automatically concluded if two or more data points suggest impairment." The chemical and/or toxicological characterizations of sediment are considered to be cumulative, temporally integrated measures, and not at all analogous to the "single excursions' of grab samples characteristic of water column monitoring. As stated elsewhere, the temporally integrated response (not a single excursion) of the benthic community is the ultimate measure of ALU attainment, and determines whether a waterbody segment is assessed as attaining, is being threatened for, or is impaired for the designated use.

VA-DEQ is aware that the Chesapeake Bay Program's Toxics Subcommittee (and more specifically, the Toxics Characterization Workgroup) has been discussing modifications and updates to the "Weight of Evidence" approach to toxics assessment in relation to Aquatic Life Use designation. However, minutes from the September 29, 2005 meeting of the Toxics Subcommittee, Toxics Characterization Workgroup Update, indicate that "all information is currently in draft form"… The Toxics Characterization Workgroup agenda for a meeting/conference call to be held on 24 October lists 'Get a solid decision matrix that can be used to characterize tributaries…' and 'Work towards a consensus on weight of indicators and final score criteria…' as subjects for discussion. Clearly, a revised procedure to substitute for the previously established "Weight of Evidence" methodology is not yet in appropriate form to be used for 305(b) assessment. Until such time as a new, improved methodology is defined and formally proposed, VA-DEQ plans to continue using the methodology that has served in the past. Once a new methodology is formally proposed, DEQ will actively participate in its evaluation and will adapt the updated methodology once approved by consensus.

9. The Guidance continues to use Virginia Health Department and DSS swimming and fish consumption restrictions to list waters as impaired even though these restrictions may not be based on data. Given the potential impact of such a listing on dischargers and local government it is imperative that impairment listings be based only on data of sufficient quantity and quality. All other types of information should be used to trigger further study rather than a listing of impairment.

Response: *All fish consumption advisories which are used for listing a water as impaired are based on QA/QC approved fish tissue data.*

10. The VPDES program interprets data relative to quantitation limits rather than detection limits, yet this Guidance document appears to use detection limits to interpret ambient data. Each listing of impairment is directly linked to permit limits through a TMDL. DEQ's failure to consistently interpret data between the VPDES and TMDL programs will result in conflicting interpretation and implementation. Ambient monitoring data used in listings must be interpreted using quantitation limits for consistency in DQOs and to address uncertainty as outlined by EPA in its CALM.

Response: *Inherent in all measurements is a quantifiable amount of uncertainty. Measurements made to determine compliance with VPDES discharge limits have both components of detection limit and quantitation limit. However VPDES reporting limits are censored for the higher quantitation limit even though detection limits for each specific analyte is available and required to be determined as specified in 40 CFR 136 Appendix B.*

Determinations where allocations are applied to permit discharges for meeting TMDL endpoints are expressed not as concentrations but as mass per time. If the volume of discharge per unit of time results in load allocation concentrations below a calculated method detection limit then, 1) new analytical

technologies must be developed to reach the lower limit of detection, or 2) multiple measurements of a sample must be performed such that the calculated mean is equal to the actual mean of the analyte concentration.

VAMWA appreciates the opportunity to provide these comments and offers to meet with DEQ to discuss these issues as a step to resolving them. Please contact me if you have any questions.

Hampton Roads Sanitation District (HRSD) Comments

HRSD appreciates the opportunity to comment on this guidance document. DEQ has received numerous comments from HRSD regarding Virginia's guidance on developing its Integrated Water Quality Report over the past 8 years; however there are several significant issues that continue to be problematic for the VPDES permitted community. Although DEQ has previously published a response to some of these comments the responses do not adequately address HRSD's concerns. Although many of these issues have been presented to DEQ in previous correspondence they are repeated here for emphasis. These points are:

1. The guidance continues to use numeric benchmarks that have not been promulgated or withstood the APA process for interpreting ambient monitoring data. Examples of such benchmarks include sediment thresholds (ERMs, PELs, etc), BIBI values, reference sites, trend analyses, data distribution percentiles and tissue values. In particular, DEQ has evidently dedicated significant resources to refining use of BIBI values to list waters as impaired. This begs the question: If DEQ believes these metrics are important to protecting the state's waters why are they not being promulgated in regulation? All such numeric benchmarks are being used in the listing process as if they were promulgated as water quality standards and are given equal weight to criteria that have been promulgated. This approach contradicts the reasons for having the APA and promulgation procedures and weakens the listing process. HRSD is also concerned that use of such benchmarks provides precedent for using any unpromulgated value as a decision point for making water quality control decisions. Perhaps such values could be used to prompt further research, but HRSD continues to disagree with DEQ's use of such benchmarks to list waters as impaired and resulting requirements for a TMDL and future VPDES conditions.

Response: *See response to VAMWA comment # 3*

2. DEQ states in the guidance that waters are listed as impaired and require a TMDL only when one or more pollutants do not meet water quality standards, and then DEQ quotes regulation as to the definition of "pollutant". Clearly the definition of "pollutant" does not include measures such as toxicity tests and biological assessments, yet DEQ is using such measures to list waters as impaired. These tests and assessments measure pollution rather than pollutants. Further, wasteloads for such measures cannot be quantified and a TMDL calculation is not possible. HRSD agrees that such measures are useful in suggesting the need for more research to identify stressors causing unacceptable measures of biological condition. However, these measures cannot be used to list waters as impaired because they do not identify pollutants, as defined in regulation, causing impairment. It is possible that stressors other than pollutants (habitat modification, for example) could be responsible for the measures observed.

Response: *Toxicity tests and biological assessments have been used to determine if the General Criteria Standard 9 VAC 25-260-20 is being met. If natural stressors are suspected of causing impairment, the waters are listed as suspected naturally impaired and a special study to confirm the natural conditions is conducted. If the special study confirms a natural impairment, the water is listed as impaired and not needing a TMDL.*

3. The guidance has not established defensible minimum data set sizes to address the uncertainty associated with impairment listings based on very little data. Although in several cases at least two exceedences of water quality standards are required over a 5-year period to trigger an impairment listing this listing can still only be based on as little as two data points. Since DEQ does not account for magnitude of exceedence (except in the weight of evidence approach) in its listing procedure an impairment listing can result from two marginal exceedences of a water quality standard. Such small data sets cannot describe a

problem as chronic, which is DEQ's definition of when impairment should be concluded. The use of small data sets will result in incorrect listings, both those that are listed as impaired but are not and those that are not listed as impaired and should be listed as impaired. Listings based on small data sets will also be biased by the seasons and conditions at the time samples were collected. The National Academy of Sciences National Research Council's report on water quality assessments and EPA's CALM both support HRSD's position that waters where data is limited must be listed in the indeterminate/insufficient categories used by DEQ in its guidance.

Response: *The Water Quality Standards do not consider a data threshold for determining if designated uses are being met. As per EPA guidance, all credible data is used when assessing designated uses. Virginia agrees there is potential for data errors or other natural factors when it reviews all credible data. This fact is addressed in assessment guidance by the "2-hit rule", allowing up to 10.5% exceedences, and best professional judgment.*

4. The VPDES permit program requires that only 40 CFR Part 136 analytical procedures be used to analyze samples when such a method is available and meets the use. There is no requirement for use of 40 CFR Part 136 procedures for analyzing ambient monitoring samples in this guidance document even though both ambient monitoring data and VPDES data are used for the same purpose: to determine potential for impact in state waters. Regulation requires the use of such methods to ensure the reliability of data and comparability in results within and between labs. Failure to make this requirement in the guidance will contradict these goals and impact the credibility of listings and the actions taken based on those listings.

Response: *DEQ uses all credible data when assessing waters. However, for supporting and listing purposes, all data used for assessment must be collected using an EPA accepted method and DEQ approved.*

5. The WQMIRA requires (according to this document) that an assessment of attribution of impairment between point and nonpoint sources be conducted for each water body, but guidance is not available outlining how this will be done. This is a significant deficiency that must be adequately addressed prior to developing the next 305(b) and 303(d) reports. HRSD requests that DEQ provide such guidance if it exists.

Response: *DEQ regional staff, which are most familiar with point and nonpoint sources in a particular water, are charged with making an initial identification of the possible sources of impairments. Additional sampling and analysis to confirm point and nonpoint sources and loadings is conducted in preparation for a TMDL.*

6. The guidance suggests that the "weight of evidence" approach for evaluating toxics data in estuarine waters is similar to that being used by the Chesapeake Bay Program. Unfortunately the document that DEQ quotes as the basis of this statement is significantly outdated. EPA's Bay Program is using a significantly different approach for its current Toxics Characterization effort, which takes frequency and magnitude of exceedence into account. The Chesapeake Bay Program Toxics Characterization workgroup is significantly changing the decision rules used in this guidance to make them more defensible. DEQ has also failed to recognize that the Bay Program approach to listing is based on the best professional judgment of numerous experts representing diverse perspectives. HRSD is not aware of a formal DEQ review process that takes this approach, but requests documentation of such a process if it exists. If DEQ conducts this review without the perspective and expertise that EPA has recognized is required the assessment process will result in less than accurate conclusions.

Response: *Refer to response to VAMWA comment # 8.*

7. The guidance continues to use Virginia Health Department swimming and fishing restrictions to list waters as impaired even though these restrictions and limitations may not be based on promulgated standards. For example, VDH has adopted in the past year new assumptions for human exposure to toxicants through consumption of fish. These assumptions do not undergo a public comment process but have resulted in TMDL listings (example: PCB listing in the James River). Given the potential impact of such a listing on dischargers and local government it is imperative that impairment listings be based only on standards that the public can review and provide comments on within a formal process such as that defined by the APA.

Response: *Fish tissue analysis and any subsequent listing is based on calculated exceedences of the Water Quality Standards which have been through the APA process.*

8. The VPDES program interprets data relative to quantitation limits rather than detection limits, yet this guidance document appears to use detection limits to interpret ambient data. For example, see the section on trends analysis. Each listing of impairment is directly linked to permit limits through a TMDL. DEQ's continued failure to consistently interpret data between the VPDES and TMDL programs will result in conflicting interpretation and implementation. Ambient monitoring data used in listings must be interpreted using quantitation limits for consistency in DQOs and to address uncertainty as outlined by EPA in its CALM.

Response: *See response to VAMWA comment # 10.*

9. HRSD notes that the guidance has changed to acknowledge the CFD approach for determining instream impairment, however much more detail must be provided for the public to understand the process. EPA's guidance on the topic is far from "fully described" and in many cases is incomplete. For example, the guidance states that criteria are attained when "the monitoring data cumulative frequency curve is completely contained inside the reference curve". This does not address discussions of the various workgroups considering this approach which acknowledged that the uncertainty associated both with the monitoring data and reference data CFDs must be addressed when determining support of designated uses. Documentation can be provided by HRSD, but certainly DEQ should correspond with the EPA's Bay Program to learn more about the limitations of the CFD approach. DEQ states that tools have been developed to implement the CFD approach; HRSD requests that this guidance and/or software be provided for review and comment.

Response: *The EPA Chesapeake Bay Program, EPA Region III, state of Maryland and Virginia have formed a workgroup to assess the new Chesapeake Bay water quality criteria recently adopted by the Board. The Chesapeake Bay Program has accepted the responsibility for conducting CFD analysis based on the new Bay criteria. Additional information associated with the new Bay criteria assessment and CFD analysis can be found in the EPA publication "Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and its tidal Tributaries" – April 2003.*

10. The guidance differentiates beach closure and advisory data based on QA/QC to determine whether a water body can be listed as impaired, but it is not clear how DEQ will make this differentiation when they receive information from other state agencies. DEQ must have a documented process in place that ensures that this requirement will be met prior to using closure and advisory information in a listing decision.

Response: *DEQ only uses QA/QC approved data for supporting and listing determinations. This requirement is applicable to all data used including federal, state, local or other water quality data generators.*

11. The use of SPMDs to make listing decisions is new to this guidance. HRSD is in agreement with scientific community consensus that such devices are only useful to determine presence/absence of chemicals but cannot be used to determine the concentration of chemicals existing in the water column. HRSD, working with the Elizabeth River Project and VIMS, have concluded that SPMDs are not reliable in quantifying concentrations of chemicals instream and therefore their uses are greatly limited. Such devices must only be used to identify waters for future research or more intensive monitoring. The use of SPMDs to list waters in any fashion is not scientifically justified and must be removed from the guidance.

Response: *The global consensus among scientists and researchers developing and using passive sampling devices is that quantifiable concentrations of toxic trace organic and inorganic chemicals are one of the end results of this technology. Furthermore the ultra low level detection limits provide for the first time actual water column concentrations of a wide range of anthropogenic chemicals know to cause human health and ecosystem effects. One of the many conclusions from the Departments most recent scientific study, "The Occurrence And Geospatial Distribution In A Statewide Stratum From A Generalized Random Tessellation Stratified Survey Of Toxic Organic Contaminants", is passive sampling devices most accurately and reliably quantify instream concentrations when compared to the statewide distribution of fish tissue polychlorinated biphenyl (PCB) impairments. Because of the integrative mechanism of passive sampling and the ability to detect ultra low levels of toxic compounds this technology will continue to be a leading tool in determining the distribution and concentration of compounds for which the Department has water quality standards and emerging contaminants.*

12. Virginia has been working on a lab accreditation rule for approximately 7 years, therefore DEQ is well aware that data used to list waters will need to meet the upcoming lab accreditation regulation. The guidance has not acknowledged this change but should. It would seem appropriate for DEQ to begin this transition in this guidance document and consider how data of differing levels of quality will be used in the listing process. DEQ should also develop a process ensuring that all such data meets the draft regulation, at a minimum. This will smooth the transition to the new regulation.

Response: *DEQ has had a QA/QC Coordinator that routinely reviews methodologies as well as lab procedures for several years. Until lab accreditation is fully implemented over the projected three year phase-in it will not significantly alter or change the way we review water quality data for supporting and listing determinations.*

13. The section titled "Chesapeake Bay Sub-categories of Aquatic Life Designated Use" explains that the overall aquatic life use status of a water segment will be determined by the "worst-case" status of any habitat within that segment. This is completely inconsistent with the weight of evidence approach being taken for toxics in the same waters and defeats the purpose of defining different habitats. DEQ must develop an approach that lists state waters based on their quality; the proposed approach will not meet that goal. Segments will be listed as impaired based on a fraction of their size; the remainder of the segment will be inappropriately listed.

Response: *According to EPA assessment guidance, independent applicability must be used when different criteria are assessed for a designated use. If one of the criteria is assessed and fails, the designated use is not supported based on that failed criterion. The weight of evidence approach uses criteria that are not*

included in the Water Quality Standards but can have a negative effect on a designated use. If there is enough evidence of a negative effect causing an impairment of a designated use, then the water will be listed.

14. The BIBI guidance has changed significantly since the last issue of this guidance was released. Issues that remain to be resolved include 1) minimum data set size requirements, 2) multiple year data requirements, 3) data interpretation when natural conditions conflict with current water quality standards and 4) the impact of tidal mixing forces. Additionally, DEQ should be aware that the benthic diagnostic tool referenced, based on input from the EPA Chesapeake Bay Program Toxics Characterization workgroup, has not been adequately validated. The workgroup recommended that the tool be validated with toxicity tests; it is unknown whether this has been accomplished. Without proper validation the tool should not be used to identify causes of impairment.

Response: *The BIBI methodology has been refined and updated based on the workgroup recommendations. Additional information relative to the updated BIBI methodology will be included in the final assessment guidance.*

Virginia Manufacturers Association Comments

I am writing on behalf of the Virginia Manufacturers Association ("VMA") to offer comments on DEQ's draft Water Quality Assessment Guidance Manual for Y2006 (the "Draft Manual"), which was released for public review on August 22, 2005. As described below, VMA supports many aspects of the draft manual, especially those that foster scientifically sound impairment determinations.

VMA is an organization formed to encourage and support the industries located within the Commonwealth of Virginia, to afford a medium for cooperation among those industries, and to initiate, encourage, foster and promote constructive policies and activities on behalf of industry. VMA provides the means for manufacturers to participate effectively in the shaping of laws, regulations and administrative rulings that affect manufacturing operations throughout the Commonwealth. VMA represents greater than 32% of the manufacturing employment base in the Commonwealth of Virginia and has been an active stakeholder in DEQ's assessment and listing process for many years.

VMA supports many of the concepts advanced by DEQ in the Draft Manual. However, as a general matter, VMA believes that a comprehensive reevaluation of designated uses for all water bodies in Virginia is necessary to ensure an accurate list of impaired waters. DEQ has already recognized that some natural trout waters have been erroneously listed as impaired for this reason. See Draft Manual page 12. VMA also believes that the role of the Department of Game and Inland Fisheries ("DGIF") in designating uses for water bodies is too great. DGIF recommendations alone should not be the basis for determining the designated use for a waterbody. There should be some additional data required to support such recommendations. Otherwise designated uses are erroneously assigned to water bodies, and as with the trout waters, additional action must be taken in the future to address the mistake.

Response: *Agreed - DEQ does rely on DGIF to recommend trout water designations as they are the state expert in managing this fishery. If data (temperature, dissolved oxygen, fish collection) or any information (via picture or citizen testimony as to the actual uses of the stream) is provided (e.g. via public comment) which disputes the DGIF data, we will consider this before changing, deleting or adding a trout water designation. We are currently working with DGIF to redefine the criteria associated with stockable streams and/or recognize that some streams (both natural and stockable) may have been listed in error or may require seasonal application of criteria.*

VMA is also concerned about the approach DEQ has taken on the issues identified below. VMA's concern is heightened in those instances where the Draft Manual does not reflect the full scope of flexibility offered by EPA in its Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act ("EPA Guidance"), dated July 29, 2005.

1. Delisting Criteria

Part VII of the Draft Manual outlines the process for seeking the delisting of a waterbody from a previous 303(d) list. Section 7.2 (pages 61-62) explains that a water listed as impaired may be delisted if (1) an EPA approved TMDL is developed for all pollutants causing impairment or (2) a subsequent assessment of new monitoring data or in special cases, modeling results show that the water is no longer impaired and EPA provides the delisting of the water.

The EPA Guidance provides more expansive opportunities for delisting. Good cause for delisting decisions includes:

- The assessment and interpretation of more recent or more accurate data in the record demonstrate that the applicable WQS(s) is being met;

- The results of more sophisticated water quality modeling demonstrate that the applicable WQS(s) is being met;

- Flaws in the original analysis of data and information led to the segment being incorrectly listed;

- Documentation that the state included on a previous section 303(d) list an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment;

- Other relevant information that supports the decision not to include the segment on the section 303(d) list.

EPA Guidance at 58-59. The Draft Manual should include all of the available options for obtaining a delisting determination.

This is especially true for prior listings for which no additional monitoring data has been obtained. Part III Rule 8 of the Draft Manual states that "waters that were on previous 303(d) lists, with no additional monitoring data for the reporting period will continue to be tracked in the Integrated Assessment Database (ADB). These waters will retain the results of the previous assessment for all designated uses." The waters will remain on the lists until either a TMDL is developed or EPA approves delisting.

According to EPA, the fact that a water was previously listed as impaired is not, by itself, "positive evidence that it must remain in Category 5 until a TMDL is established." (EPA Guidance at page 57.) While EPA agrees that segments should not be removed from Category 5 **solely** because they have not yet been reassessed, there are situations where removal is appropriate based on a reevaluation of the pre-existing data and information using a new or revised methodology. (EPA Guidance at page 59.) DEQ should acknowledge that listing decisions (whether to add or remove waters from Category 5) may be based on a reassessment of existing data.

VMA recognizes that DEQ may not have the resources to reassess all waters previously listed as impaired, but interested stakeholders should be given an opportunity to conduct their own reassessments (subject, of course, to DEQ review and approval). The Draft Manual should be revised to reflect that delistings can occur based on a reassessment of existing data, in addition to an assessment of new data.

Response: *Listing and delisting is an integral part of water quality assessment and a requirement of the CWA Section 303(d). As such, DEQ and EPA work together, both formally and informally, with listing and delisting issues. All of the opportunities described above are considered as waters are evaluated and re-evaluated. If delisting opportunities arise, based on any or all of the above, they are presented to EPA for delisting consideration. However, EPA has the authority to approve all listings and delistings and must agree with DEQ delisting justification(s) prior to 303(d) impaired waters approval.*

The reasoning behind the new data requirement stems from the fact that each assessment incorporates a moving reporting period. As the data window moves forward, older data drop out of the cycle and in many cases new data takes its place. In cases where new data is not collected but older data drops off, the results of the assessment can change but there is no proof of improvement. In these cases, EPA has rejected delisting without new data to actually show the water is meeting the previously impaired use.

2. Listings Based on Fish Consumption Advisories

As in previous guidance, the EPA Guidance reiterates that fish consumption advisories alone should not be the basis for an impaired listing. The EPA Guidance provides that:

- advisories should not be used to demonstrate impairment of "fishable" uses unless: (1) they are based on actual fish tissue data from the specific water segment; and (2) the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisories are cumulatively equal to or less protective that those in the state's water quality standards;

Response: *DEQ assesses fish tissue data using fish tissue concentrations (Tissue Values or TVs) that are equivalent to those that are the basis for the Virginia Water Quality Criteria for the particular toxic contaminants. These TVs use the same risk assessment parameters that were used in establishing the Water Quality Criteria for the toxic pollutants. This follows EPA Guidance and is consistent with sound science.*

The Virginia Department of Health (VDH) issues Fish Consumption Advisories based on actual fish tissue data from the specific water segment.

- if a state classifies shellfish growing areas "prohibited" as a precautionary measure (e.g., due to the proximity of a wastewater discharge or the absence of a sanitary survey), then it should not list the segment in Category 5 without additional segment-specific data; and

Response: *In 1997, the Virginia General Assembly enacted the Water Quality Monitoring, Information and Restoration Act (WQMIRA). This legislation supplements the CWA 305(b)/303(d) federal requirements. The Act requires the 303(d) portion of the Integrated Report to identify geographically defined water segments as impaired if monitoring or other evidence shows fishing restrictions or advisories. The requirements of WQMIRA are discussed in Part II, 1.b, of the Guidelines. In the case of assessment of fish consumption advisories issued by the Virginia Department of Health, WQMIRA established the listing criteria and this state law supersedes EPA guidance.*

Current DEQ Guidance on assessment of shellfish use takes into account concerns with "prohibited shellfish growing areas" based on precautionary measures and these water segments are not listed in category 5 without additional segment-specific data.

- If an advisory is based on FDA action levels, then the state should not list the segment in Category 5 without additional segment-specific data. EPA Guidance at pages 61-62**.**

Response: *FDA action levels are not used as the sole basis for fish consumption advisories.*

DEQ should conform its Draft Manual to EPA's approach to fish and shellfish advisories. DEQ also should revise the process by which it assesses impairment using fish tissue screening values, consistent with principles of sound science.

3. Lake and Reservoir Assessment

The DEQ Draft Manual outlines the process for assessing lakes and reservoirs. Draft Manual at pages 48-52. This assessment methodology uses criteria different from those developed through the Lake and Reservoir Nutrient WQS technical advisory committee ("TAC"). The determination of impairment for lakes should be based on the new criteria developed through the TAC process. For example, the TAC

specifically rejected use of the trophic state index ("TSI") to determine whether a lake is impaired, yet the Draft Manual discusses the use of the TSI to make impairment assessments for lakes and reservoirs. It is inappropriate for DEQ to make impairment determinations for lakes and reservoirs based on standards that deviate from the draft water quality criteria for lakes developed by the TAC.

Response: *The assessment guidance for 2006 reflects the current method of assessing lakes which EPA has found to be an acceptable approach in lieu of regulatory criteria. The methodology was developed because VA DEQ did not have numerical criteria for nutrients in lakes and reservoirs (or dissolved oxygen criteria specific for lakes) with the intention of using this approach until the public process was completed for these lake related criteria. Although the currently proposed amendments do not include a combined TP/DO TSI approach, one of the reports (web link:* ***http://www.deq.state.va.us/wqs/pdf/AACLAKEDO.pdf****) provided by the Academic Advisory Committee to DEQ on development of freshwater nutrient criteria responded to nine DEQ questions about dissolved oxygen criteria, including the appropriateness of using such an approach. The lakes and reservoir nutrient criteria are still at the rulemaking stage and have not been adopted yet at this time so it would be premature to apply those criteria for the current assessment. The final version of the lake and reservoir nutrient criteria will not be in effect until late 2006 or early 2007. Therefore, the earliest possible use in water quality assessment of the final adopted version of the lake nutrient criteria would be during the 2008 assessment.*

4. Treatment of Chesapeake Bay and Its Tributaries

VMA notes that DEQ is continuing to work with stakeholders to address the issues relating to improving the health of the Chesapeake Bay and its tributaries. VMA encourages DEQ to continue this dialogue, and to carefully consider the public comments and technical information it has received with respect to the establishment of water quality criteria for, and permitting and listing of the waters in the Chesapeake Bay and its tributaries.

VMA applauds DEQ's efforts to develop new methodologies for the 2006 listing cycle, consistent with guidance from EPA. For the most part, VMA supports the process outlined in the Draft Manual. However, VMA believes that additional refinements are necessary in order to ensure that Virginia's 2006 integrated § 303(d)/§ 305(b) report is scientifically and legally sound.

Response: *DEQ agrees that refinements are still needed and is working with the Chesapeake Bay workgroup and EPA RIII while several refinements have already been made since the earlier version of this guidance was released. Additional refinements may be necessary prior to the 2008 assessment.*